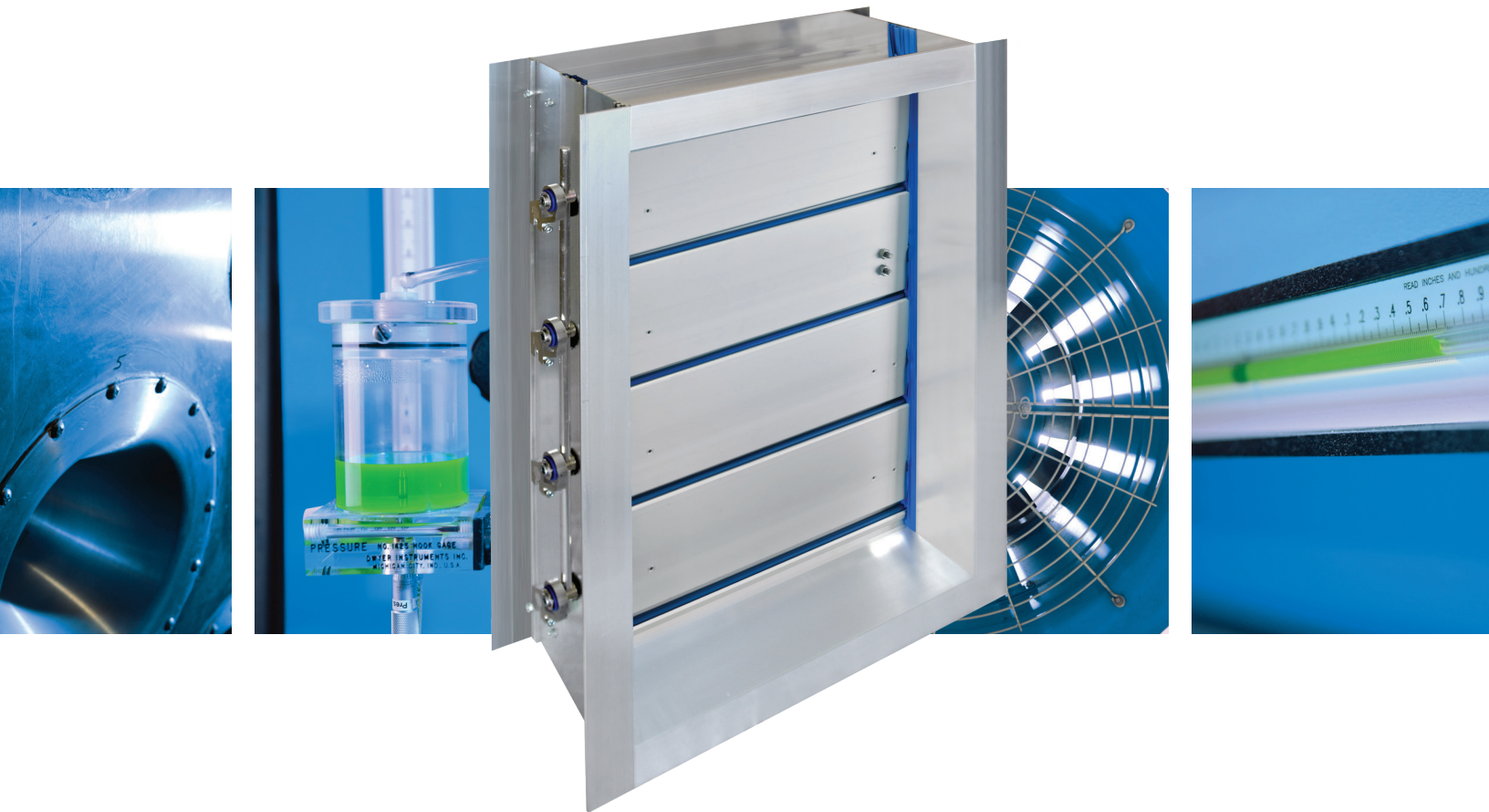


# WIDE PROFILE

ZERO PRESSURE DROP – SERIES 1000 / 1500  
FOR INTAKE & EXHAUST PLENUM APPLICATIONS

TAMCO 



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EXPERIENCE TRUE EXCELLENCE IN SERVICE, QUALITY,  
AND MAINTENANCE-FREE PERFORMANCE.

## WP – WIDE PROFILE CONTROL DAMPERS

Zero pressure drop performance



### ZERO PRESSURE DROP SERIES 1000 & 1500

- TAMCO's Series 1000 and Series 1500 dampers with the WP – Wide Profile frame, add zero pressure drop.
- The contour and additional depth of the Wide Profile frame act as a Venturi, converting turbulent airflow into laminar flow.
- Laminar flow allows the air to move with less resistance, thereby reducing pressure drop.
- In addition to the benefit of laminar airflow, the Wide Profile frame allows air to be pulled through the damper at a slightly higher rate than it would be through the opening alone.
- Options offered with Series 1000 and 1500 WP – Wide Profile dampers are the same as those offered with Standard Profile dampers: ET – Elevated Temperature, MR – Moisture Resistance, and SW – Salt Water Resistance.

## WP – WIDE PROFILE CONTROL DAMPERS

Zero pressure drop performance

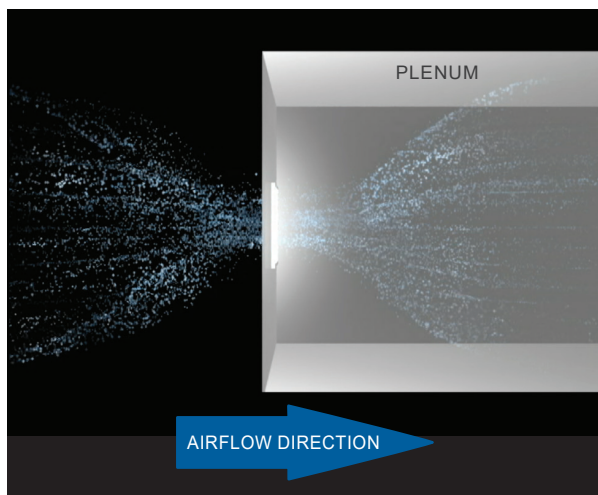
### AMCA FIGURE 5.4

AMCA's test Figure 5.4 is designed to replicate an intake plenum application.

- When air is drawn into the plenum (or test chamber), through an opening, the expansion, contraction, and re-expansion of the air causes it to lose its energy.
- In our industry, this energy loss is referred to as Pressure Loss or Pressure Drop.
- This expansion, contraction, and re-expansion of air keeps it in a state of a turbulent flow. As shown below, this orifice effect does not allow any energy to be regained during the process.
- By installing TAMCO's specially designed WP – Wide Profile Damper, the orifice effect converts into a Venturi Effect. Air passing through the damper becomes laminar for a brief period of time, allowing some of the lost energy to be regained.
- In some cases, when a WP Damper is installed, the airflow through the opening will increase. When this happens, fan speed must be reduced to achieve the same airflow. When fan speed is reduced, pressure drop through the damper will also decrease.
- Reducing fan speeds will allow building owners to realize the additional benefits of energy and cost savings.

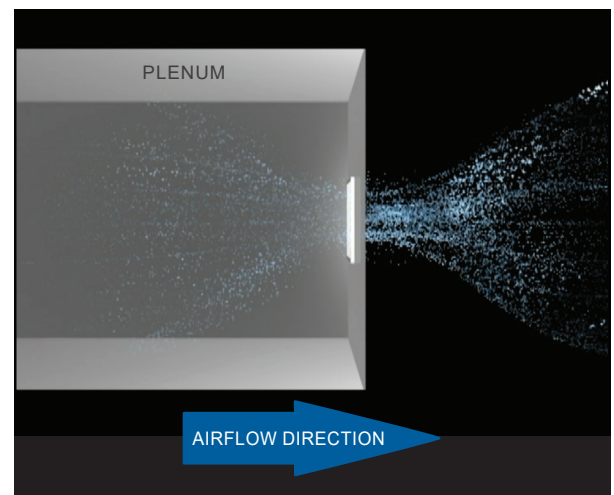
### AMCA FIGURE 5.5

AMCA's test Figure 5.5 is designed to replicate an exhaust plenum application.



#### INTAKE:

Test damper is located at the entrance of a plenum.



#### EXHAUST:

Test damper is located at the exit of a plenum.

## WP – WIDE PROFILE CONTROL DAMPERS

Zero pressure drop performance

### SERIES 1000 & 1500

The table below shows AMCA Figure 5.4 (*intake*) and Figure 5.5 (*exhaust*) pressure drop test results for a range of opening sizes. Pressure drop tests were conducted for each of the following:

- System Only (*No damper installed in the opening*)
- Damper & System (*Either a TAMCO Series 1000 or 1500 installed in the opening*)

The third column (Damper Only) under each AMCA Figure shows what effect the TAMCO Series 1000 & 1500 dampers have on the airflow through each opening size.

This is calculated by subtracting the Damper and System results from the System Only results, leaving a negative pressure drop value for the Wide Profile TAMCO Series 1000 and 1500 dampers.

The lower system curve effect obtained when using TAMCO Wide Profile Series 1000 and 1500 dampers will, in almost all of these cases, require the fan speed to be reduced to achieve the same airflow as through the opening alone.

### SERIES 1000 & 1500 VELOCITY VS. PRESSURE DROP

SIZE <i>inches</i>	VELOCITY <i>fpm</i>	PRESSURE DROP ( <i>inches w.g.</i> )					
		AMCA Fig. 5.4 ( <i>Intake</i> )			AMCA Fig. 5.5 ( <i>Exhaust</i> )		
		DAMPER & SYSTEM	SYSTEM ONLY	DAMPER ONLY	DAMPER & SYSTEM	SYSTEM ONLY	DAMPER ONLY
12 X 48	1000	0.157	0.166	-0.008	0.143	0.155	-0.012
	2000	0.625	0.654	-0.029	0.596	0.638	-0.042
	3000	1.388	1.482	-0.094	1.332	1.458	-0.126
24 X 24	1000	0.154	0.164	-0.010	0.155	0.159	-0.004
	2000	0.615	0.658	-0.043	0.650	0.653	-0.003
	3000	1.408	1.478	-0.069	1.459	1.471	-0.012
36 X 36	1000	0.157	0.172	-0.015	0.152	0.157	-0.005
	2000	0.628	0.685	-0.057	0.614	0.634	-0.020
	3000	1.401	1.547	-0.146	1.382	1.427	-0.045
48 X 12	1000	0.140	0.166	-0.025	0.133	0.155	-0.023
	2000	0.547	0.654	-0.107	0.546	0.638	-0.092
	3000	1.211	1.482	-0.271	1.233	1.458	-0.225
48 X 48	1000	0.163	0.169	-0.006	0.146	0.155	-0.009
	2000	0.646	0.673	-0.027	0.588	0.613	-0.025
	3000	1.461	1.520	-0.058	1.296	1.394	-0.098

## WP – WIDE PROFILE CONTROL DAMPERS

Thermally insulated near-zero pressure drop performance

### ALSO AVAILABLE: SERIES 9000 NEAR-ZERO PRESSURE DROP

Even though TAMCO’s Series 9000 thermally insulated blade is thicker than a Series 1000 or 1500 blade, the Venturi Effect still produces a near-zero pressure drop. This is especially evident at lower air velocities (*to 1000 fpm*), characteristic of intake applications where Series 9000 damper are required.

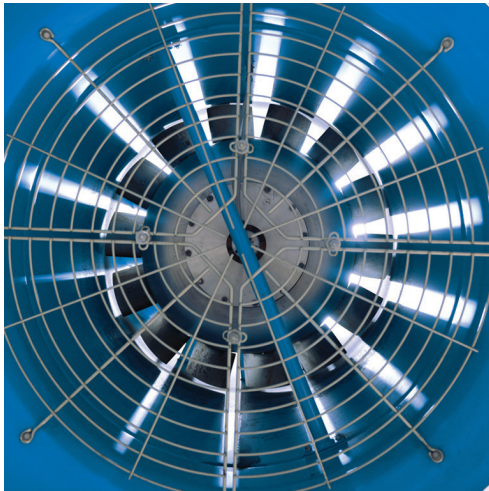
Options offered with Series 9000 WP – Wide Profile dampers are the same as those offered with Standard Profile dampers: SC – Severe Cold Temperature, MR – Moisture Resistance, and SW – Salt Water Resistance.



### SERIES 9000 VELOCITY VS. PRESSURE DROP

SIZE <i>inches</i>	VELOCITY <i>fpm</i>	PRESSURE DROP ( <i>inches w.g.</i> )					
		AMCA Fig. 5.4 ( <i>Intake</i> )			AMCA Fig. 5.5 ( <i>Exhaust</i> )		
		DAMPER & SYSTEM	SYSTEM ONLY	DAMPER ONLY	DAMPER & SYSTEM	SYSTEM ONLY	DAMPER ONLY
12 X 48	1000	0.168	0.166	0.002	0.151	0.155	-0.004
	2000	0.649	0.654	-0.005	0.618	0.638	-0.020
	3000	1.483	1.482	0.001	1.389	1.458	-0.069
24 X 24	1000	0.171	0.164	0.007	0.161	0.159	0.002
	2000	0.666	0.658	0.008	0.672	0.653	0.019
	3000	1.514	1.478	0.037	1.523	1.471	0.052
36 X 36	1000	0.180	0.172	0.008	0.166	0.157	0.009
	2000	0.716	0.685	0.031	0.671	0.634	0.037
	3000	1.613	1.547	0.066	1.509	1.427	0.082
48 X 12	1000	0.168	0.166	0.002	0.152	0.155	-0.003
	2000	0.669	0.654	0.015	0.628	0.638	-0.010
	3000	1.497	1.482	0.015	1.423	1.458	-0.035
48 X 48	1000	0.176	0.169	0.007	0.160	0.155	0.005
	2000	0.704	0.673	0.031	0.644	0.613	0.031
	3000	1.571	1.520	0.051	1.428	1.394	0.034

# WIDE PROFILE



## SPX ENGINEERED AIR MOVEMENT

80 Lorne Street  
Smiths Falls, ON K7A 5J7, Canada  
800 561 3449  
[tamcodampers.com](http://tamcodampers.com)

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